

New evidence on preference utilization

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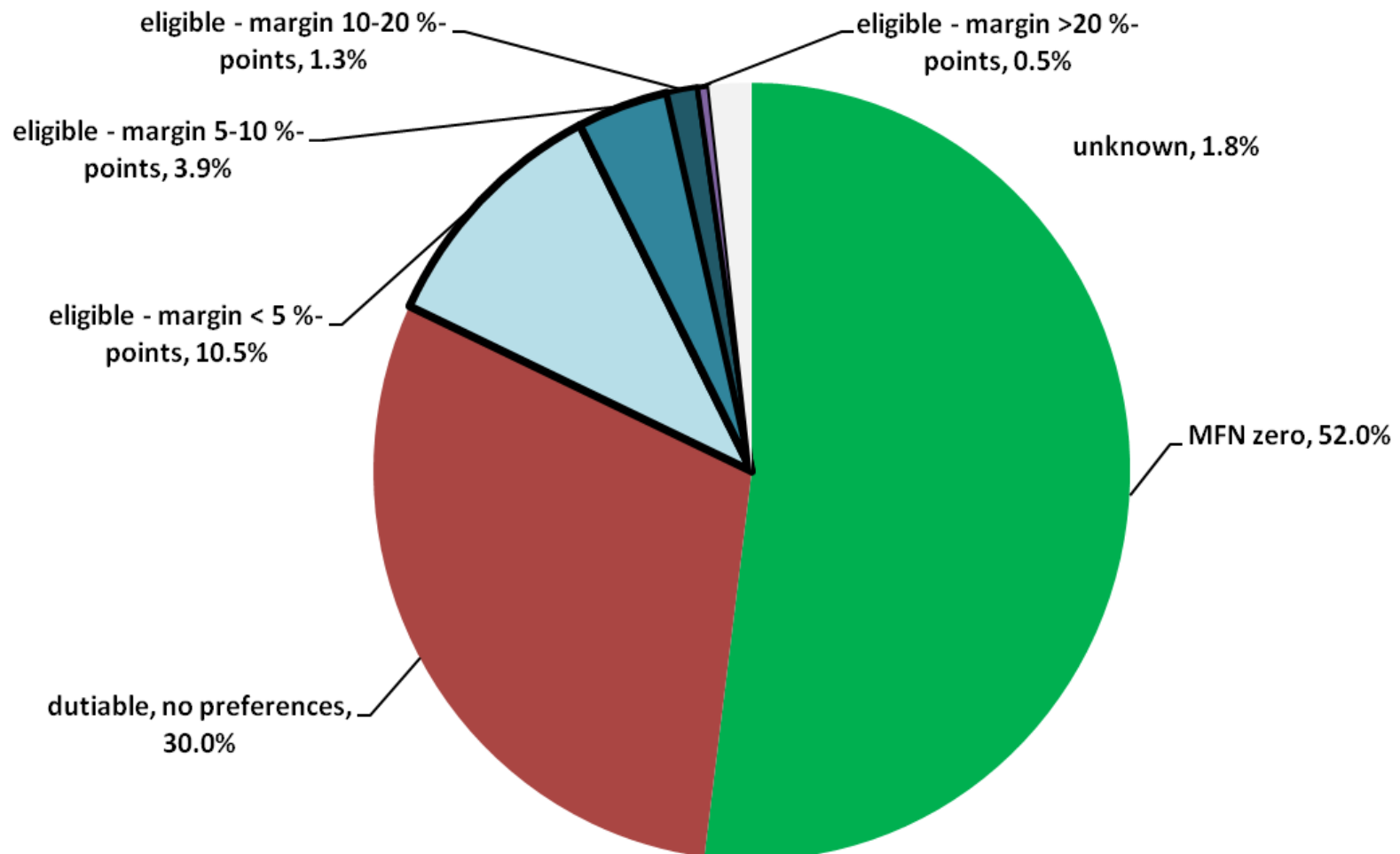
Research questions

- To what extent are preferences utilized?
- What determines utilization (are utilization costs variable or fixed costs)?
- How high are utilization costs?

Background:

Extent of preferential trade and margins relatively low

- Only about 16% of global trade is preference-eligible.



Literature review

- “High” estimates for utilization costs (2% - 6%, according to overview in Bureau et al. 2007), e.g. in Manchin (2005), who estimates a threshold of 4.5% for EU-ACP trade.
- Compliance costs are usually seen as variable costs only (e.g. Manchin 2005) .
- Focus only on EU or US as importers and/or certain exporters (e.g. Manchin 2005 – EU-ACPs), or on certain regimes only (Brenton & Ikezuki 2004 – US-AGOA, Hakobyan 2010 – US GSP), or on certain products (e.g. Bureau 2006 – agriculture); overlapping regimes?
- High level of product aggregation or “wrong” aggregation (e.g. Agostino et al. 2010, Nilsson 2012) .

Definition of preference utilization

- Preference utilization rate $u = \text{trade entering under preference} / \text{trade eligible for preference}$
- Preference is used if compliance cost < benefits (duty savings, ...)
- Compliance costs depend on:
 - ROOs (inputs, value-added, cumulation, direct shipment, ...)
 - Paperwork
 - etc...
- Compliance cost can be variable (% of export value) or fixed (per txn, per year, per production line).

Data

- Four importing countries (AUS, CAN, EU, US)
- AUS & CAN data: New data from WTO Secretariat (new transparency mechanism on RTAs)
- EU & US: Eurostat & USITC. Already used by others (e.g. Hakobyan, Nilsson). We use a twist to get more detailed data.
- Data shows imports by import regime, product & partner at HS8
- We use one year only (2008)
- Imports are matched with tariffs (not trivial, especially for the EU).
- [CH data: Forthcoming]
- „Best“ regime

To what extent are preferences utilized?

Summary statistics I

- Overall utilization rate (by value) is high (90% in CAN, EU, USA, 60% (?) in AUS), and often even for small margins:

Preferential margin m	u_{value}			
	Australia	Canada	EU	USA
All imports	0.61	0.90	0.87	0.92
$0 < m \leq 1.0\%$	0.45	0.17	0.83	0.90
$1.0\% < m \leq 2.5\%$	0.41	0.75	0.82	0.95
$2.5\% < m \leq 5.0\%$	0.63	0.87	0.85	0.94
$5.0\% < m \leq 10.0\%$	0.73	0.94	0.93	0.95
$10.0\% < m \leq 15.0\%$	.	0.96	0.90	0.91
$15.0\% < m \leq 20.0\%$	0.96	0.85	0.95	0.87
$20.0\% < m \leq 30.0\%$	.	1.00	0.99	0.98
$30.0\% < m \leq 50.0\%$	.	.	0.97	0.91
$50.0\% < m \leq 100.0\%$	.	.	0.93	0.99
$m > 100.0\%$	.	.	.	1.00
$m = ?$ (specific rates)	0.77	0.94	0.89	0.92

Summary statistics II: margin and value

- Strong indication that compliance costs are (also) fixed, not variable (similar for AUS, CAN, USA)

EU	All imports	$0 < \text{elig} \leq 10$	$10 < \text{elig} \leq 100$	$100 < \text{elig} \leq 1,000$	$1,000 < \text{elig} \leq 10,000$	$10,000 < \text{elig} \leq 100,000$	$100,000 < \text{elig} \leq 1M$	$1M < \text{elig} \leq 10M$	$10M < \text{elig} \leq 100M$	$100M < \text{elig} \leq 1B$	$\text{elig} > 1B$
All imports	0.46	0.11	0.12	0.15	0.27	0.46	0.66	0.80	0.87	0.89	0.94
$0 < m \leq 1.0\%$	0.54	-	0.06	0.15	0.23	0.59	0.76	0.84	0.81	0.81	0.98
$1.0\% < m \leq 2.5\%$	0.35	0.08	0.08	0.09	0.16	0.33	0.53	0.68	0.79	0.91	0.94
$2.5\% < m \leq 5.0\%$	0.41	0.12	0.11	0.13	0.22	0.40	0.62	0.78	0.86	0.85	0.90
$5.0\% < m \leq 10.0\%$	0.58	0.11	0.19	0.26	0.39	0.58	0.77	0.89	0.93	0.93	0.97
$10.0\% < m \leq 15.0\%$	0.62	0.10	0.10	0.20	0.49	0.70	0.84	0.88	0.90	0.90	0.96
$15.0\% < m \leq 20.0\%$	0.73	0.40	0.26	0.31	0.66	0.78	0.88	0.94	0.96	0.99	0.94
$20.0\% < m \leq 30.0\%$	0.80	-	0.43	0.42	0.66	0.79	0.82	0.98	0.99	1.00	
$30.0\% < m \leq 50.0\%$	0.77	1.00	0.25	0.24	0.80	1.00	0.89	0.99			
$50.0\% < m \leq 100.0\%$	0.25	-	-	-	0.14	0.44	0.89	0.66	1.00		

(Table shows simple average utilization rates)

What determines utilization (are utilization costs variable or fixed costs)?

Empirical approach: determinants of u

- Main specification:

$$u_{k,x} = \beta_0 + \beta_1 m_{k,x} + \beta_2 \log(\text{elig}_{k,x}) + \beta_4 \text{primary}_k + \beta_5 \text{agri}_k + \gamma_k + \delta_x + \varepsilon_{k,x} ,$$

- m = margin, elig = eligible imports, k = HS8, x = exporter
- u is expected to be determined by m and elig . We control for primary and agri products and use “best regime” (=country group) and HS Section dummies (RoO !)
- Only variable costs: Only m should be significant
- Only fixed costs (or both): Both m and elig should be significant
- With $0 \leq u \leq 1$, we use OLS and GLM (fractional logit).
- No time dimension (robustness check)

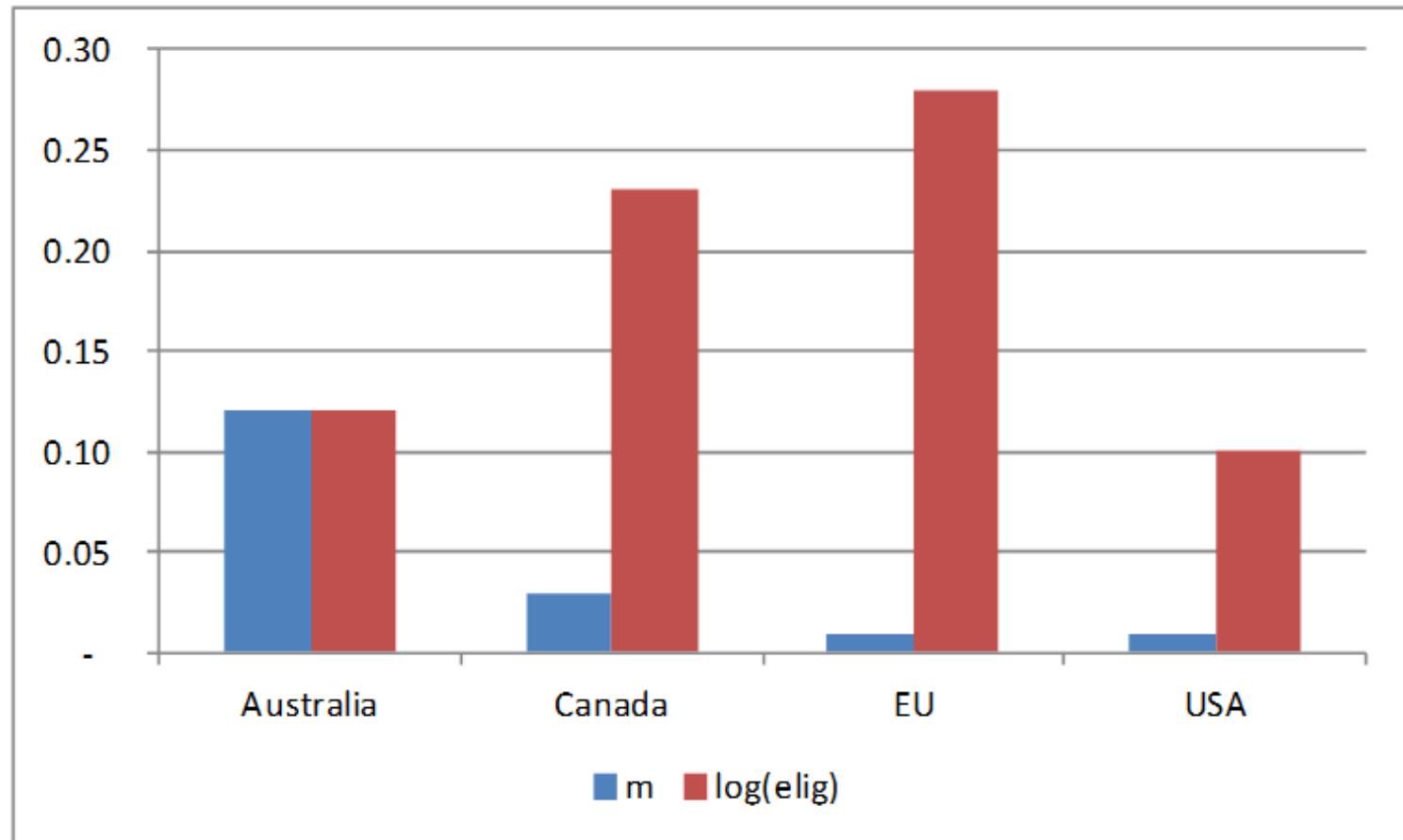
Results I

Dependent variable: <i>u</i> VARIABLES	Australia		Canada		EU		USA	
	GLM (marginal effect)		GLM (marginal effect)		GLM (marginal effect)		GLM (marginal effect)	
	(5)	(7)	(5)	(7)	(5)	(7)	(5)	(7)
m	2.662*** (0.107)	3.102*** (0.168)	1.328*** (0.0571)	0.660*** (0.103)	3.190*** (0.0553)	0.374*** (0.0605)	0.188*** (0.0351)	0.146*** (0.0436)
log(elig)	0.0399*** (0.00150)	0.0471*** (0.00176)	0.0686*** (0.000723)	0.0602*** (0.000833)	0.0871*** (0.000549)	0.0860*** (0.000594)	0.0416*** (0.000783)	0.0342*** (0.000822)
agri		3.667*** (0.158)		-0.0161 (0.0955)		0.499*** (0.0225)		0.160*** (0.0341)
primary		-0.00262 (0.0500)		-0.0752*** (0.0277)		-0.0557*** (0.0163)		0.00142 (0.0158)
Observations	13,040	13,040	31,686	31,686	122,747	122,747	34,049	34,049
Product dummies	none	HS Section	none	HS Section	none	HS Section	none	HS Section
Exporter dummies	none	groups	none	groups	none	groups	none	groups

- Utilization increases with margin and total imports.
- The effect of the margin is strongest in AUS and least strong in US.

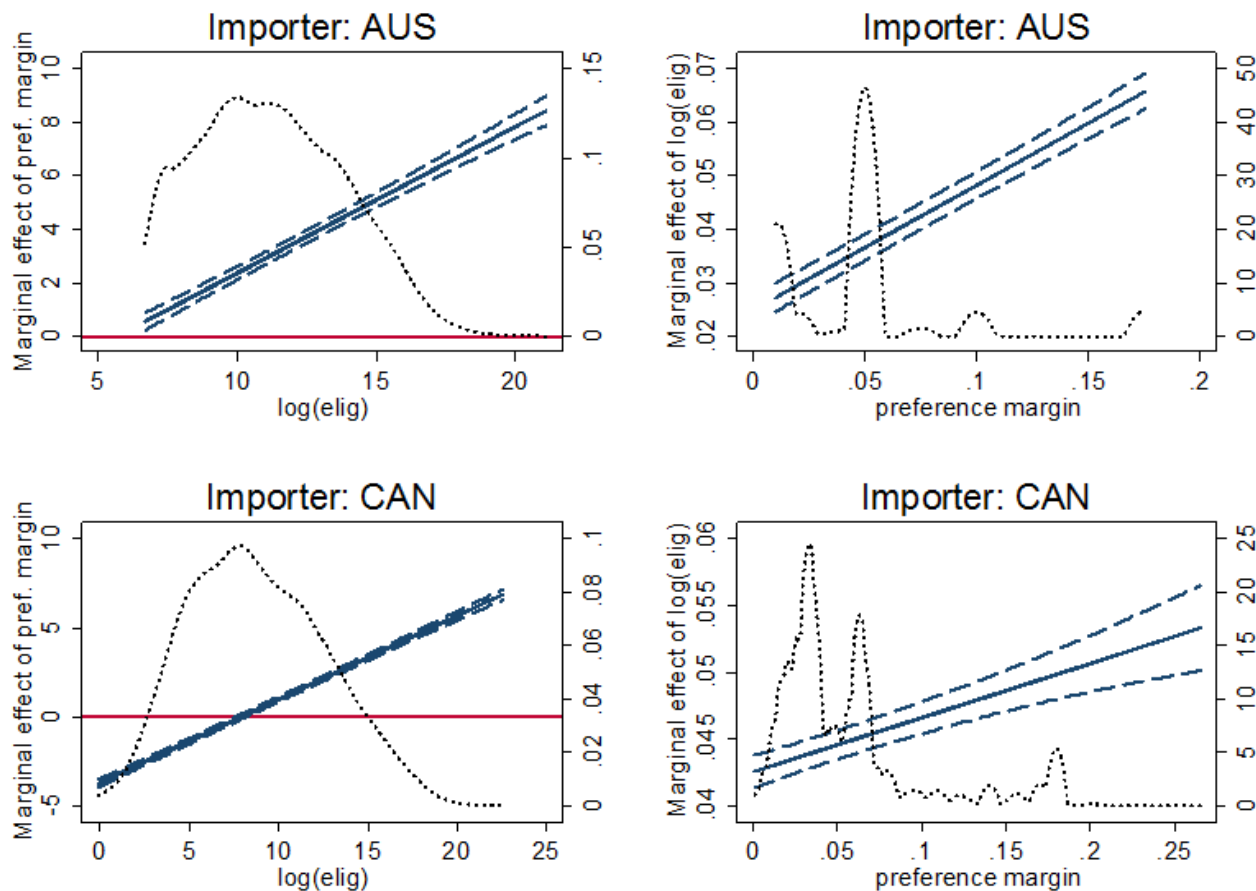
Results II

- What matters more? Margin or value?
- An increase by one sd increases utilization by:



Results III

- Results on marginal effects confirm this:



(EU and US results are similar to Canada)

How to get (almost) transaction level data

- For EU and US, data is available by month and EU member or US custom district (\approx state). [no such data for AUS & CAN]
- # of obs (1,000): EU 123 \blacktriangleright 2,130 // US 34 \blacktriangleright 533
- This data contains plenty of zeroes. Example:
Imports of 6101.20.00 from Guatemala (USD 1,000):

District	Import regime	Jan	Feb	Mrz	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total imports	Months with trade
Los Angeles, CA	DR-CAFTA	88	88	-	-	66	152	21	9	109	64	-	64	661	9
Los Angeles, CA	MFN	-	-	-	-	-	-	-	-	-	18	-	-	18	1
Miami, FL	DR-CAFTA	8	9	14	32	12	40	25	12	8	2	11	2	175	12
Miami, FL	MFN	-	-	-	-	-	-	-	-	-	-	1	1	2	2
Savannah, GA	DR-CAFTA	-	-	-	-	-	-	-	1	-	-	-	-	1	1

- If there are “enough” zeroes then we assume the remaining data is close to txn-level.

Results at „transaction level“:

- Trade value coefficients are similar
- Effect of m becomes ambiguous (EU).

Dependent variable: <i>u</i> VARIABLES	EU (logit, marginal effects)				US (logit, marginal effects)			
	complete data		1-6 months with trade		complete data		1-6 months with trade	
	(5)	(7)	(5)	(7)	(5)	(7)	(5)	(7)
m	1.859*** (0.0117)	-0.121*** (0.0144)	2.290*** (0.0189)	-0.0239 (0.0232)	0.239*** (0.00989)	0.135*** (0.0125)	0.325*** (0.0178)	0.234*** (0.0221)
log(elig)	0.0758*** (0.000157)	0.0826*** (0.000170)	0.0744*** (0.000274)	0.0872*** (0.000310)	0.0543*** (0.000304)	0.0534*** (0.000313)	0.0529*** (0.000667)	0.0524*** (0.000730)
agri		0.288*** (0.00624)		0.427*** (0.0104)		0.222*** (0.0120)		0.234*** (0.0212)
primary		-0.0739*** (0.00489)		-0.107*** (0.00773)		-0.0246*** (0.00606)		-0.0189** (0.00964)
Observations	2,130,302	2,130,302	863,016	863,016	532,522	532,511	197,535	197,524
Product dummies	none	HS Section	none	HS Section	none	HS Section	none	HS Section
Exporter dummies	none	groups	none	groups	none	groups	none	groups

How high are fixed utilization costs?

Estimation of fixed costs I

- Linear spline regression using “absolute duty reduction”
- Assume that costs are within a range, rather than one threshold → spline with two knots

Dependent variable: u VARIABLES	aggregated data				monthly data ($\leq 6m$)	
	Australia (1)	Canada (2)	EU (3)	USA (4)	EU (5)	USA (6)
f1	6.062*** (0.907)	3.616*** (0.133)	4.021*** (0.0618)	4.023*** (0.213)	2.661*** (0.0358)	4.134*** (0.0618)
f2	11.89*** (0.444)	11.88*** (0.267)	10.50*** (0.0822)	10.03*** (0.289)	7.253*** (0.0408)	7.328*** (0.0814)
b1	0.0335*** (0.00684)	0.0181*** (0.00220)	0.0158*** (0.00171)	-0.0137 (0.00983)	0.0294*** (0.000862)	-0.00366 (0.00333)
b2	0.0496*** (0.00285)	0.0763*** (0.00118)	0.0943*** (0.000761)	0.0474*** (0.00152)	0.0913*** (0.000511)	0.0707*** (0.00146)
b3	0.000397 (0.0133)	0.0251*** (0.00600)	0.0295*** (0.00201)	0.0179*** (0.00253)	0.0329*** (0.00131)	0.0158*** (0.00214)
Constant	0.126*** (0.0326)	0.131*** (0.00470)	0.105*** (0.00454)	0.607*** (0.0315)	0.234*** (0.00142)	0.587*** (0.0112)
Observations	13,040	31,686	122,747	34,049	863,016	197,535
R-squared	0.076	0.299	0.287	0.080	0.124	0.037
e ^{f1}	429	37	56	56	14	62
e ^{f2}	145,801	144,351	36,316	22,697	1,412	1,522

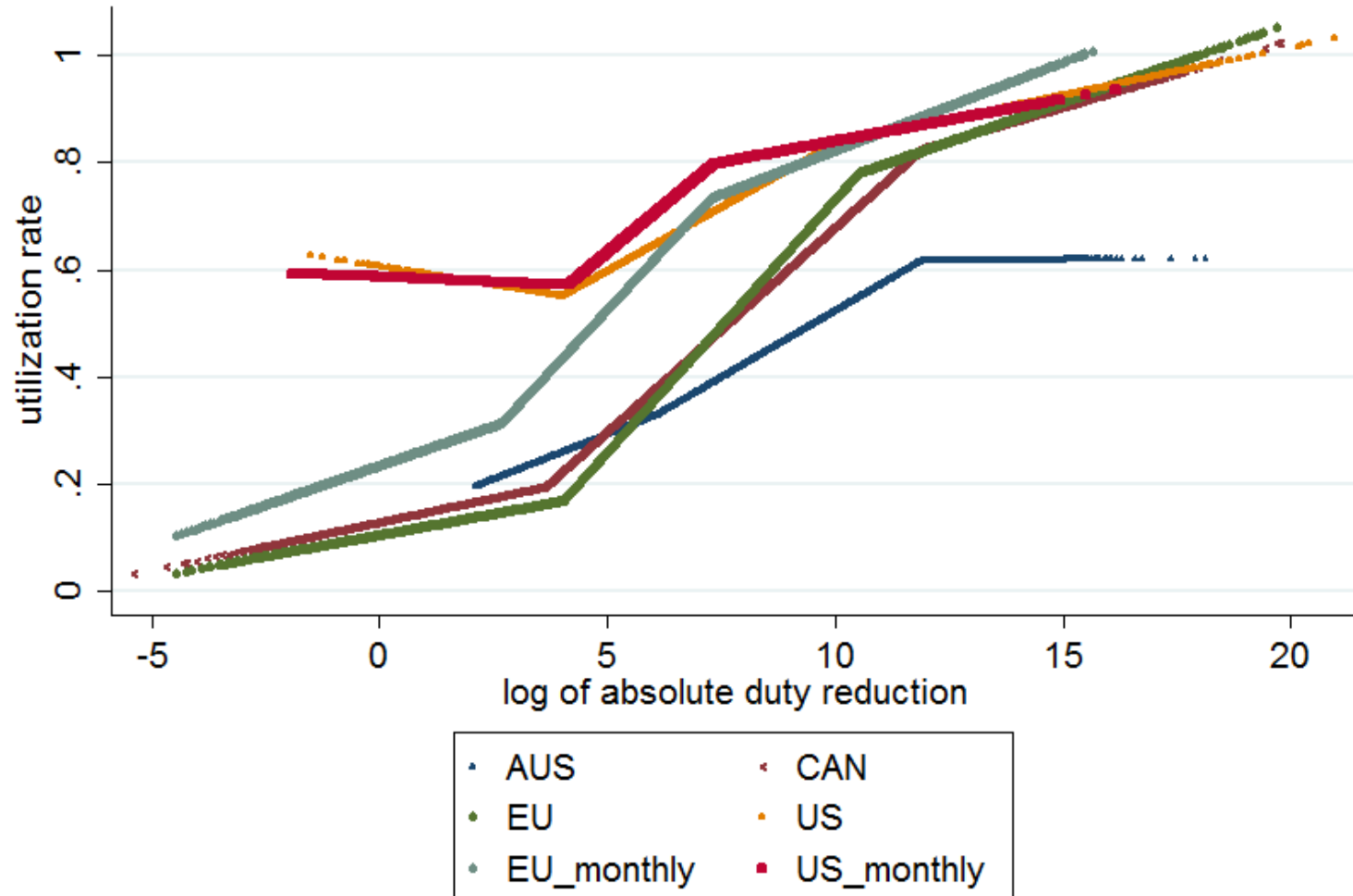
Robust standard errors in parentheses. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

f1 and f2 are estimates for the knots and b1, b2 and b3 are the slope parameters.

e^{f1} and e^{f2} are the estimated thresholds in absolute USD values.

Estimation of fixed costs II

Predicted values from spline regression



Conclusion

- Overall utilization rates are fairly high.
- High utilization even for small margins and small values and duties.
- Utilization rates and costs vary across importers. US appears to have lowest utilization costs .
- Empirical results suggest that (importer-specific) compliance costs are mostly fixed costs, not variable costs → Preferential schemes might benefit small exporters less.
- Estimated range of fixed cost is around USD 14 to 1'500 USD for EU and US, but in many cases (e.g. EU-Swiss watches) costs appear to be practically zero.
- Other benefits?